

**REMARKS/ARGUMENTS**

Claims 2, 5-6, and 8-12 are pending. By this Amendment, claims 2, 5-6, and 8 are amended, and claim 7 is canceled without prejudice or disclaimer. No new matter is added. Support for the claims can be found throughout the specification, including the original claims, and the drawings. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Entry of the amended claims is proper under 37 C.F.R. §1.116 since the amendments: (1) place the application in condition for allowance for the reasons discussed herein; (2) do not raise any new issues requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution without incorporating additional subject matter; (3) satisfy a requirement of form asserted in the previous Office Action; and/or (4) place the application in better form for appeal, if necessary. Entry is thus requested.

The Office Action objected to the drawings under 37 CFR 1.83(a). The Examiner's comments have been addressed in amending the claims. Accordingly, the objection should be withdrawn.

The Office Action objected to claims 5-12 for informalities. The Examiner's comments have been addressed in amending claims 5-6 and 8. Accordingly, the objection should be withdrawn.

The Office Action rejected claim 2 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. The Examiner's comments have been

Amendment dated March 8, 2010Reply to Office Action of December 8, 2009

addressed in amending claim 2. Accordingly, the rejection should be withdrawn.

The Office Action rejected claim 2 under 35 U.S.C. §103(a) as being unpatentable over Loprete et al. (hereinafter “Loprete”), U.S. Patent No. 6,591,621, and TaeDuk, U.S. Patent No. 5,285,646, as informed by Hix et al. (hereinafter “Hix”), U.S. Patent Publication No. 2003/0143083. It has been assumed for the purpose of this reply that the Examiner intended to reject claims 2 and 5-12 based on the text of this rejection. The features of claim 7 have been added to independent claim 2, and claim 7 has been canceled. The rejection is respectfully traversed insofar as it applies to claims 2, 5-6 and 8-12.

Independent claim 2 recites, *inter alia*, when an operation mode of the refrigerator is selected by a user, selecting the rotation direction of the compressor according to an amount of cooling air supply corresponding to the selected operation mode, and controlling a rotation speed of the compressor in the selected rotation direction by varying an operation frequency of the compressor based on a temperature inside the refrigerator; when the operation mode of the refrigerator selected by the user is a power saving operation mode, rotating the compressor in the second rotation direction, and when the temperature inside the refrigerator is higher than a pre-set temperature, rotating the compressor in the first rotation direction; and when the operation mode of the refrigerator selected by the user is a standard operation mode, rotating the compressor in the first operation direction, and when the temperature inside the refrigerator reaches the pre-set temperature, rotating the compressor in the second rotation direction.

Amendment dated March 8, 2010Reply to Office Action of December 8, 2009

Loprete, TaeDuk, and Hix, taken alone or in combination, do not disclose or suggest such features of independent claim 2, or the claimed combination.

That is, the Office Action acknowledged that “Loprete discloses the use of a two speed motor, instead of a continuously variable speed motor [ ] to drive the compressor” and that “Loprete does not disclose the entry of modes by a user.” The Office Action then asserted that “TaeDuk explicitly discloses varying the speed of a compressor as part of the reversal process ...” and “also explicitly discloses the use of multiple modes, (heating, cooling, [and] defrost [ ]),” referring to the Abstract and Figs. 5 and 7 of TaeDuk. The Office Action further asserted that “Hix [ ] explicitly discloses that in a two-stage reversing compressor, the start-up torque in [reverse] mode may cause damage to a compressor...”, referring to paragraph 0004 of Hix. The Office Action then concluded that “[i]t therefore would have been obvious to one of ordinary skill in the art at the time of the invention to use the variable speed motor of TaeDuk to operate the compressor of Loprete in order to have both a greater variety of pressure ratios available and prevent damage to the compressor due to excessively speedy switching of directions.”

Further, in the rejection of claim 7, the Office Action acknowledged that “Loprete [ ] does not explicitly disclose the selection of an operation mode of the cooling system by a user.” The Office Action then asserted that “it falls within the realm of common knowledge to permit user programming of a thermostat in order to permit temperature control of a home.” The Office Action then concluded that “it would have been obvious to one of ordinary in the skilled in the art at the time of the invention to use a user-programmable thermostat in the system of

Amendment dated March 8, 2010Reply to Office Action of December 8, 2009

Loprete [ ] in order to permit timed temperature control of a refrigerator according to user-specific load patterns.”

However, TaeDuk discloses a two speed compressor 5 that operates at a low speed and a high speed and a four-way reversing valve 4 that switches a flow of a refrigerant discharged from a discharge side “DS” of the compressor 5 through an indoor heat exchanger 2 and an outdoor heat exchanger 1, thereby operating the indoor heat exchanger 2 and the outdoor heat exchanger 1 in a heating mode, respectively, as a condenser and an evaporator and in a cooling mode, respectively, as an evaporator and a condenser, according to a signal from a microprocessor 12, which is based on signals from an indoor temperature sensor 2’ and an outdoor temperature sensor 1’. The compressor 5 of TaeDuk is driven at the low speed for a predetermined period of time prior to switching of the refrigerant by the four-way reversing valve 4 merely to reduce a pressure difference between a discharge pressure and a suction pressure of the compressor 5. See, for example, Figs. 2-4 and column 2, lines 5-17, column 2, line 47-column 4, line 52 of TaeDuk. Thus, the compressor 5 of TaeDuk rotates only at the low speed and the high speed in one rotation direction. In contrast, independent claim 2 recites selecting the rotation direction of the compressor according to an amount of cooling air supply corresponding to the operation mode selected by a user and controlling a rotation speed of the compressor in the selected rotation direction by varying the operation frequency of the compressor based on the temperature inside the refrigerator.

Hix fails to overcome the deficiencies of Loprete and TaeDuk, as it is cited merely for

Amendment dated March 8, 2010

Reply to Office Action of December 8, 2009

disclosing that in a two stage reversing compressor, a startup torque in the reverse mode may cause damage to the compressor.

Further, none of the applied references disclose or suggests when the operation mode of the refrigerator selected by the user is a power saving operation mode, rotating the compressor in the second rotation direction, and when the temperature inside the refrigerator is higher than a pre-set temperature, rotating the compressor in the first rotation direction; and when the operation mode of the refrigerator selected by the user is a standard operation mode, rotating the compressor in the first operation direction, and when the temperature inside the refrigerator reaches the pre-set temperature, rotating the compressor in the second rotation direction. Furthermore, it is respectfully submitted that using a user-programmable thermostat in the system of Loprete would have resulted in merely switching the compressor of Loprete, rather than controlling a rotation speed of the compressor of Loprete in a selected rotation direction by varying an operation frequency of the compressor based on a temperature.

Accordingly, the rejection of independent claim 2 over Loprete, TaeDuk, and Hix should be withdrawn. Dependent claims 5-6 and 8-12 are allowable over Loprete, TaeDuk, and Hix at least for the reasons discussed above with respect to independent claim 2, from which they depend, as well as for their added features.

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Amendment dated March 8, 2010

Reply to Office Action of December 8, 2009

**CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
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